

CLAIMS:

1. A single-band type metallic belt wound between annular V-grooves of a drive pulley and a driven pulley, the metallic belt including a metal endless band having at least one layer, and a plurality of metal push blocks engaged and superimposed on the band in a manner enabling sliding in a longitudinal direction of the band, the metallic band being characterized by:
- the push block including a body formed by bending a single wire material and subsequently performing pressing so as to have two outer side surfaces defining side contact surfaces that are inclined to respectively make frictional contact with two inner surfaces of the annular V-grooves, a pair of pillars respectively extending along extensions of the two contact surfaces of the body and having an outer surface that is continuous with the side contact surfaces of the body, and a pair of opposed hooks extending inwardly from distal ends of the pillars;
- wherein an opening is defined by the pair of hooks, and a band holding surface is formed with a cross-sectional shape of a plurality of arcs arranged in parallel on the body in the opening, with the band inserted in the opening of each push block and held on the band holding surface;
- a metal retainer arranged on an outer surface of the band in a manner engageable with the pair of hooks to ensure engagement between the band and the push blocks; and
- a ring attached to the outer surface of the retainer to prevent deformation of the retainer.
2. The metallic belt according to claim 1, characterized in that the inner circumferential length of the ring is set to be 0.5 to 1.0 mm longer than the outer

circumferential length of the retainer.

3. The metallic belt according to claims 1 or 2, characterized in that the width W_2 of the ring and the width
5 W of the opening of the push block have a relationship satisfying $W_2 \leq W$.

4. The metallic belt according to any one of claims 1 through 3, characterized in that the ring has a plate
10 thickness of 0.15 to 0.25 mm.

5. The metallic belt according to any one of claims 1 through 4, characterized in that sets of projections and concavities for forcing and ensuring alignment of the push
15 blocks that are adjacent are formed at a total of three locations, two on the hooks and one on the body, with each projection being a truncated cone, and each concavity having a shape similar to the corresponding projection.

20 6. The metallic belt according to any one of claims 1 through 5, characterized in that the side contact surface of the body and the side contact surface of the pillar continuous with the body side contact surface are inclined relative to travel direction of the push block, and a corner
25 located at a front side of the body with respect to the travel direction is formed with an obtuse angle.

7. The metallic belt according to any one of claims 1 through 5, characterized in that the side contact surface of
30 the body and the side contact surface of the pillar continuous with the body side contact surface include a step (β) for forming a gap with the inner side surfaces of the annular V-grooves of the pulleys on the front side of the

push block with respect to the travel direction.

8. The metallic belt according to any one of claims 1 through 6, characterized in that the side contact surface of the body and the side contact surface of the pillar include
5 a plurality of grooves extending parallel to the travel direction of the push block, and the width of the grooves at the front side with respect to the travel direction is wider than the width at the rear side of the grooves in the travel
10 direction.

9. Push blocks for use with a metallic belt wound between annular V-grooves of a drive pulley and a driven pulley, the push blocks being superimposed with one another
15 along the longitudinal direction of the metallic belt, the metallic belt push block being characterized by:

a contact surface for making frictional contact with inner side surfaces of the annular V-grooves of both pulleys, the contact surface including an oil breaking
20 portion for breaking up an oil film formed on the inner side surfaces of the pulleys.

10. The metallic belt push block according to claim 9, characterized in that the push block has a front surface
25 located on the front side with respect to travel direction and a rear surface located on the rear side, wherein the angle formed by the contact surface and the front surface of the push block is an obtuse angle.

30 11. The metallic belt push block according to claim 9 or 10, characterized in that the oil breaking portion is formed by a ridge line defined by the contact surface and the rear surface of the push block.

12. The metallic belt push block according to claim 9, characterized in that the contact surface includes a front half, intersecting the front surface of the push block at an obtuse angle, and a rear half, intersecting the rear surface of the push block at a right angle, wherein a ridge line functioning as the oil film breaking portion is defined between the front half and the rear half.

13. The metallic belt push block according to claim 9, characterized in that the front half of the contact surface forms an obtuse angle with the front surface of the push block, and the rear half of the contact surface forms an obtuse angle with the rear surface of the push block, wherein the ridge line functioning as the oil film breaking portion extends along the entire length of the contact surface at a middle part of the contact surface in the widthwise direction.

14. The metallic belt push block according to claim 9, characterized in that a step extending along the entire length of the contact surface on a front portion of the contact surface, wherein the step defines the ridge line functioning as the oil film breaking portion.

15. The metallic belt push block according to claim 9, characterized in that a front portion of the contact surface forms an obtuse angle with the front surface of the push block, and a groove extends along the entire length of the contact surface at the middle of the contact surface, wherein an inner wall of the groove and the contact surface defines the ridge line that functions as the oil film breaking portion.

16. The metallic belt push block according to claim 15, characterized in that the groove has a rectangular cross-section.

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17. The metallic belt push block according to claim 15, characterized in that the groove has a triangular cross-section.

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18. The push block according to any one of claims 9 through 17, characterized in that the side contact surface of the body of the push block in frictional contact with the inner side surfaces of the annular V-grooves of both of the pulleys and the side contact surface of the pillar

15 continuous with the body side contact surface includes a plurality of grooves extending parallel to the travel direction of the push block.

19. A metallic belt comprising a metal band and the push block according to any one of claims 9 through 18 including an oil film breaking portion formed on the side contact surface of the body of the push block and the side contact surface of the pillar contacting the side contact surface of the body.

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20. A metallic belt including an endless metal band and a plurality of push blocks engaged with the metal band in a relatively movable manner and wound between a drive pulley and a driven pulley so as to enable continuously variable transmission of rotation speed of the driven pulley, the metallic belt comprising:

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a plurality of thin plate-shaped rings having cross-sections of a plurality of continuous arcs, the rings being

superimposed to form the metal band;

an endless non-processed first retainer, arranged on an outer surface of the metal band, for engaging the metal band and the push block;

5 an endless non-processed second retainer, arranged on an outer surface of the first retainer, for preventing deformation caused by vibration in the superimposing direction of the metal band; and

10 wherein the first and second retainers have an arcuate cross-sectional shape similar to the cross-sectional shape of the metal band; and

wherein the push block includes a body having two outer side surfaces defining side contact surfaces that are inclined to respectively make frictional contact with the
15 pulleys, pillars respectively extending along extensions of the two contact surfaces of the body, a pair of opposed hooks formed on distal ends of the pillars, an opening for insertion of the metal band, and a band holding surface defined on an upper surface of the body and shaped to have a
20 cross-sectional shape that is substantially similar to the cross-sectional shape of the band.

21. A metallic band metal band used for the metallic belt according to claim 20.

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22. A metallic belt push block used for the metallic belt according to claim 20.

23. A metallic belt push block according to claim 20,
30 wherein the push block is made of a metal wire material.

24. The metallic belt push block according to claim 20, wherein the push block is made of a steel plate.

25. The metallic belt push block according to claim
20, wherein the band holding surface of the push block has a
cross-sectional shape of a plurality of continuous arcs that
5 is similar to the cross-sectional shape of the band, and the
band holding surface has a radius of curvature that is
greater than the radii of curvature of the arcs of the band.

26. The metallic belt according to claim 20, wherein
10 the first and second retainers have the same cross-sectional
shape and the same function.